

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.

Application Serial Number: 10/774,355 A  
Source: IFUO  
Date Processed by STIC: 10/29/04

# ***ENTERED***



IFWO

## RAW SEQUENCE LISTING

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:14

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

3 <110> APPLICANT: Firestein, Stuart  
 4 Zhang, Xinmin  
 6 <120> TITLE OF INVENTION: MOUSE OLFACTORY RECEPTOR GENE SUPERFAMILY  
 8 <130> FILE REFERENCE: A34570-PCT-USA-A 070050.2520  
 10 <140> CURRENT APPLICATION NUMBER: 10/774,355A  
 11 <141> CURRENT FILING DATE: 2004-02-06  
 13 <150> PRIOR APPLICATION NUMBER: PCT/US02/25556  
 14 <151> PRIOR FILING DATE: 2002-08-09  
 16 <150> PRIOR APPLICATION NUMBER: 60/311,159  
 17 <151> PRIOR FILING DATE: 2001-08-09  
 19 <150> PRIOR APPLICATION NUMBER: 60/339,694  
 20 <151> PRIOR FILING DATE: 2001-12-12  
 22 <160> NUMBER OF SEQ ID NOS: 2596  
 24 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
 26 <210> SEQ ID NO: 1  
 27 <211> LENGTH: 924  
 28 <212> TYPE: DNA  
 29 <213> ORGANISM: Mus musculus  
 31 <220> FEATURE:  
 32 <223> OTHER INFORMATION: MOR1-1  
 34 <400> SEQUENCE: 1  
 35 atgtggtcca atatcagtgc tgcccccttt ctgctgactg gcttcccagg actggaagca 60  
 36 gctcatcact ggatctctat ccccttcttt gccatctata tctctgtgct tctgggcaat 120  
 37 ggcacacttc tctacctcat caaggatgac cacaacctcc atgaacccat gtactatttc 180  
 38 cttgccatgc tggcaggcac agacctcaca gttacactga ctacaatgcc cactgtaatg 240  
 39 gctgtattat gggatgaatca tagagagata agacacggag cctgcttctt acaggcctac 300  
 40 atcattcact ccctttccat tgtggagtca ggtgtcttgc ttgccatgct ttatgatcga 360  
 41 tttgtcgcca tctgcacacc tctgcattac aactctatcc ttaccaattc cagggttata 420  
 42 gctataggac ttgggggtggt actgaggggc tttttgtctc ttgtgcccc aatcctgcct 480  
 43 ctcttttggg tctcatattg ccgttcccat gttctttctc atgccttctg cctccaccaa 540  
 44 gatgtcatga aactggcatg tgctgacatt acctttaacc gcatatatcc agttgttttg 600  
 45 gttgccctga ctttcttccg cgatgcgctc atcattgtct tttcctatgt cctcattctg 660  
 46 aagacagtta tgggcattgc ctctggagag gagagagcaa aggctctcaa cacctgtgtt 720  
 47 tcacacatta gctgtgtcct ggtcttttac atcactgtga ttggcctgac cttcattcac 780  
 48 aggtttggaa agaacgctcc ccatgtggtg cacattacca tgagctatgt ctactttctc 840  
 49 tttcctccat ttatgaaccc catcatctac agcatcaaga ccaagcaaat tcagaggagt 900  
 50 gttctccatc tctatctgt ataa 924  
 52 <210> SEQ ID NO: 2  
 53 <211> LENGTH: 948  
 54 <212> TYPE: DNA  
 55 <213> ORGANISM: Mus musculus  
 57 <220> FEATURE:  
 58 <223> OTHER INFORMATION: MOR1-2

(pg. 6-7)

## RAW SEQUENCE LISTING

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:14

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

60 &lt;400&gt; SEQUENCE: 2

```

61 atgccttcaa tgtggctcaa catttcctct tccccattcc tgctcacagg cttcccaggt 60
62 ctggagaaaag cccatcacct gatctccctc ccattactga tggcctatat ctccatattg 120
63 cttggcaacg gcaccctcct tttcctcatt aaggatgacc ataacctcca tgagcccatg 180
64 tattatttct taggtatgtt ggcagctaca gatcttggag taacattgac caccatgccc 240
65 acagtgtctga gtgtactatg gttaaatcac agggaaattg gccatggagc ctgcttctct 300
66 caggcctatt ttatccacac tctctctatt gtggagtcgg gggctcttgc tgccatggcc 360
67 tatgaccgtt tcattgccat tcgcaaccca ctaagggtata ccaccatcct tacagatact 420
68 aaggttaataa agattggcat aggccttagtg atgagggtg gtctgtcaat catgccaata 480
69 atcattcgcc tgcattgggt tccctattgt cgctcccatg tactctccca tgctttctgt 540
70 ctacaccaag atgtcatcaa gctagcctgc gctgacatca cattcaatcg tctctatcct 600
71 gttgtgggtg tatttgcaat ggtcttgcta gatttcctga tcatcttctt ctccctacgtt 660
72 ttgattctca agactgtcat gggcattgct tctacagatg agcggggccaa ggctctcaac 720
73 acatgtgtct cccacatctg ttgcatcttg gtcttctatg tcactgtggt tggctctgacg 780
74 ttatttcaca ggtttggaag gaatgttctt catgtctgct acatcacaat gagctacatc 840
75 tactttcttt tccccctttt tatgaaccct gtcactata gcattaagac caaacagatt 900
76 cagagtgggt tgcttcgctt gttctccctg ccttggtcta aaacctga 948

```

78 &lt;210&gt; SEQ ID NO: 3

79 &lt;211&gt; LENGTH: 936

80 &lt;212&gt; TYPE: DNA

81 &lt;213&gt; ORGANISM: Mus musculus

83 &lt;220&gt; FEATURE:

84 &lt;223&gt; OTHER INFORMATION: MOR1-3

86 &lt;400&gt; SEQUENCE: 3

```

87 atgtggccca acagcagtga tgctcctttc ctactgactg gctttctggg cttggaaatg 60
88 attcaccact ggatctctat ccctttcttt gtcactact tctccatcat tgtagggaat 120
89 ggtacccttc tcttcatcat ttggagtgc cacagccttc atgagcccat gtactacttc 180
90 ttggctgtgc tggcaagtat ggacctggg atgacactaa ccacgatgcc caccgtgctg 240
91 ggtgtcctgg tgctaaacca gagggagatt gtacatgggg cctgtttcat tcagtcctac 300
92 ttcattcact cactagccat tgtagaatcg ggggtcttgc ttgccatgtc ttatgatcga 360
93 tttgttgcca tctgcacacc tctgcattac aactctatcc ttaccaatcc cagggtgatg 420
94 aagatggcac tgggagcact gctcagagga tttgtgtcca tcgtgcccc aatcatgcct 480
95 ctcttttggg tcccatactg ccattcccat gttctttctc atgccttctg cctccaccaa 540
96 gatgtcatga aactggcatg tgctgacatt acttttaacc tcatatatcc agttgttttg 600
97 gttgccctga ctttcttctt cgatgcgctc atcattatct tttcctatgt cctcattctg 660
98 aagaaagtta tgggcatcgc ctctggagag gagagaaaa agtctctcaa cacctgtgtt 720
99 tcacacatta gctgtgtcct ggtcttttac atcactgtga ttggcctgac cttcattcac 780
100 aggtttggaa agaacgctcc catgtgtgtg cacattacca tgagctatgt ctactttctc 840
101 tttcctccat ttatgaaccc catcatttac agcatcaaga ccaagcaaat tcagaggagc 900
102 attctccgtc tactgtccaa acacagtagg acttga 936

```

104 &lt;210&gt; SEQ ID NO: 4

105 &lt;211&gt; LENGTH: 954

106 &lt;212&gt; TYPE: DNA

107 &lt;213&gt; ORGANISM: Mus musculus

109 &lt;220&gt; FEATURE:

110 &lt;223&gt; OTHER INFORMATION: MOR1-4

112 &lt;400&gt; SEQUENCE: 4

```

113 atgcctgtaa tttggctcaa cacctcaacc taccattcc tgctcacagg cttcccaggt 60
114 ctggagaaat cccatcacct gatctccctc ccattactga tggcctatat ctccatattg 120

```

## RAW SEQUENCE LISTING

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:14

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

```

115 cttggcaacg gcaccctcct tttcctcatt aaggatgacc acaacctcca tgagcccatg 180
116 tattattttct taggtatgct ggcagctacg gatcttggag taacattgac caccatgccc 240
117 acagtgtctgg gtgtactatg gttaaatcac agggaaattg gccatggagc ctgcttctct 300
118 caggcctatt ttatccatag tttctctatt gtggagtcgg gggctctgct tgccatggcc 360
119 tatgaccggtt tcattgccat tcgcaaccca ttaagatata ccaccatcct tactgatatt 420
120 aaggtaataa agattggcat aggcgtagtg atgagggctg gtctttcaat catgccataa 480
121 atcattcgac tgcattgggt tccctattgt cgctcccatg tactctccca tgctttctgt 540
122 ctacaccaag atgtcatcaa gctagcctgt gctgacatca cattcaatcg tctctatcct 600
123 attgtttgtg tattttgcat gggacttttg gattttttga ttatttggtt ctctacatt 660
124 ttgattctca agactgtcat gggcattgct tctacagatg agcggggcaa ggctctcaac 720
125 acatgtgtct cccatatctg ttgcatcttg gtcttctatg tcaactgtgt tggtttgaca 780
126 tttattcaca ggtttgaaa gaatttctct catattgtac atataacaat gagctacatc 840
127 tgcttctctt tccccctatt tatgaacct gtcacttctca gtattaagac caaacagatt 900
128 cagagtgggt tgcttcgctt gttctcactg ccttattcta gaattcgact ctga 954

```

130 &lt;210&gt; SEQ ID NO: 5

131 &lt;211&gt; LENGTH: 945

132 &lt;212&gt; TYPE: DNA

133 &lt;213&gt; ORGANISM: Mus musculus

135 &lt;220&gt; FEATURE:

136 &lt;223&gt; OTHER INFORMATION: MOR13-1

138 &lt;400&gt; SEQUENCE: 5

```

139 atgggaggtg aagcccacaa cagctctggg ttgcctcctt tcactctgac aggactgcca 60
140 gggatggaga cctcccagca ctggttggtc ctgctccttg gtgttcttta cagcgtctcc 120
141 atagtgggca atgcctgat tctgttcac atcaaggagg aagagagtct tcaccagccc 180
142 atgtactact tcctatctct gctgtcagga aatgacctg gtgtgtcttt ctccacactg 240
143 cctacagttc tgggagtgtt ttgttttcac ttaagagaga tcagttttaa ctctgcatg 300
144 tcccaaagt tctttatcca tctttctct ttcattggag ctgggattct gctggccatg 360
145 agctttgatc gctatgtagc catctgtaac ccactgcgct attccacagt actcactgat 420
146 gcccgagtga tgtggatggg tgtatgtgtt ttccttcgaa gtttctgcat gattttccca 480
147 ttacctttcc ttctgaagag gttgcccttc tgcaaggcta atgtgctctc tcatgcctac 540
148 tgtctgcatc ctgatctgat tcgactgcct tgtggtgaca ctccattaa taatatattt 600
149 ggtctgtcca ttgtcatctc tacctttggg ctggattctg cactcatttt cctttcttat 660
150 gttctcatc ttctgctcag gcttgctatt gcctcccggg aagaaaggat gaaaacactg 720
151 aatacatgtg tgtcacacct gtgtgctgtg ctcatcttct atgtgcctaa ggtaggtgtg 780
152 tccatgtttg ctctgctatg gaggcagcc cctcactatg tacacacact cttgtcactc 840
153 atctatctct ttgttctctc aatgctcaac cctgtcatct actccatcaa aaccaaggag 900
154 attcgtcgga ggttttgcaa aatcctgctg gggaacaaat tttga 945

```

156 &lt;210&gt; SEQ ID NO: 6

157 &lt;211&gt; LENGTH: 966

158 &lt;212&gt; TYPE: DNA

159 &lt;213&gt; ORGANISM: Mus musculus

161 &lt;220&gt; FEATURE:

162 &lt;223&gt; OTHER INFORMATION: MOR5-1

164 &lt;400&gt; SEQUENCE: 6

```

165 atgttgctc catcaagtat gtcagaagta actaacacca ctcatggccc tttctacttc 60
166 atcctcaccg gcatcccagg atttgaggat atccatctct ggatctccat ccccttcttc 120
167 tgctctaca ccataccat catgggcaac accaccatcc taactgtcat ccgcacagag 180
168 ccctctctcc acgagcccat gtacctcttc ctctctatgc tggccctcac tgacctgggt 240
169 ctaactctca ccacactccc tacagtcatg caggctctct ggttcaacat tcgggaaate 300

```

## RAW SEQUENCE LISTING

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:14

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

```

170 agctttgagg cctgctttgc acaggtattc ttcctccatg ggttctcatt catggaatca 360
171 tctgtttctat tggccatgtc ctttgaccgt tatgtggcca tctgtcgccc actccactat 420
172 gctcccatcc tcaccagtga ggctcattgt agaatagggt tggccatcat ttgccgctgt 480
173 gtctttggtg ttcttccctc ccttttccctg ctcaagegcc tgcccttctg ccattcccac 540
174 cttctttctc actcctactg cctccaccag gatatgattc acctggtctg cgctgacatc 600
175 agagtcaaca gatggtacgg atttgctctg gtccctgtca ttattgtatt ggaccctctg 660
176 ctcatgttac tctcctatgc acttatcctg aaaagtgtcc tgaacacagc cacttggact 720
177 gaacgactcc gggctctcaa caactgtctg tcccacatgc tagctgttct ggttctctat 780
178 gtccttatgg ttggtgtgtc tatgactcac cgctttgcga agcatgcttc tccactggtc 840
179 catgtttctca tggccaatat ctatctgctg gcacctcctg tgatgaacct catcatttac 900
180 agtgtaaaga ccaagcagat ccgtcaagga attactcgcc tcctgttgca aagaaagggt 960
181 cactaa

```

183 &lt;210&gt; SEQ ID NO: 7

184 &lt;211&gt; LENGTH: 954

185 &lt;212&gt; TYPE: DNA

186 &lt;213&gt; ORGANISM: Mus musculus

188 &lt;220&gt; FEATURE:

189 &lt;223&gt; OTHER INFORMATION: MOR2-1

191 &lt;400&gt; SEQUENCE: 7

```

192 atgaagggtg ctattccacc acgtgccaac ttcagctacg ctatattttt gctcacccggc 60
193 ttcccagggtc tgggaatgggc tcatcattgg atttcactgc ccatatttat ggggtatttt 120
194 gtagccatca tgggtaatgc cactatcttg catctgggtc gaactgacct ttccctccac 180
195 cagcccatgt actacttccg ggccatcttg gccgtgacag acctgggctt atgcatgtca 240
196 acgtcgcttc ctgtgctggg ggtgttatgg tttgatgccc ggatgggtgg tctggtgccc 300
197 tgtgtgctcc agcagcactt cctccactct ttctcctca tggaatcagc agtgctattt 360
198 gctatggctc tggaccgtct gatagcaatc cgattccgcg tgcgctatgc atctgtgctc 420
199 actggggcccc gctgtggcatt gataggcacg gtgctgggta tgcggagtgc agctattaca 480
200 gccgcacctt cactacatct actgacattt gactactgtc accctgggtc tctctcccat 540
201 gcctattgtc ttcatacagga catgatccgt ctggcctgtt ctgacaccgg cttcaacaga 600
202 ctctatggac tgtgcatcat catgctagcc atgggttcag atgtcctctt catcctgctc 660
203 tctacgctg tcactctccg cacagtgtcg gccattgcct ctgcagggga gaggtcaag 720
204 gccctcaaca cgtgcgtctc ccacatcctg gctgtactct gtttttatgt tctgtttctg 780
205 ggcctgtcca ttgtgcacag atttgacag cacacctcac ccctgggtgca catcctaag 840
206 ggcacagtgt ctgtgctttt tccaccctg atgaaccctg ttatctacag catcaagacc 900
207 caacagatcc gcagggccat tgtcaagggt atttcactgg gtaagattca gtaa 954

```

209 &lt;210&gt; SEQ ID NO: 8

210 &lt;211&gt; LENGTH: 966

211 &lt;212&gt; TYPE: DNA

212 &lt;213&gt; ORGANISM: Mus musculus

214 &lt;220&gt; FEATURE:

215 &lt;223&gt; OTHER INFORMATION: MOR5-2

217 &lt;400&gt; SEQUENCE: 8

```

218 atgttgcatc catcaagtat gtcagaagta acaaacacca ctcatgatcc tttctacttc 60
219 atcctcaccg gcatcccagg atttgaggat atccatctct ggatctccat tcccttattc 120
220 tgcccttaca ccacttccat catgggaaac accaccatcc taaccgttat ccgcacagag 180
221 ccactctctc accagcccat gtacctcttc ctctccatgc tggccctcac tgacctgggt 240
222 ctaactctca ccactctccc tacagtcatg cagctccttt ggttcaacat ccgagaaatc 300
223 agctttgagg cctgttttgc ccagttcttc ttcctccatg ggttctcttt catggaatca 360
224 tctgtttctat tggccatgtc ctttgaccgt tatgtggcca tctgtcgccc actccactat 420

```

## RAW SEQUENCE LISTING

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:14

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

```

225 gcctccatcc tcaccagtga ggctcattgct agaataagggt tggccatcat ttgccgctgt 480
226 gtcttggtctg ttcttccctc ccttttcctg ctcaagcgcc tgcccttctg ccattcccac 540
227 cttattttctc actcctactg cctccaccag gatatgattc acctgggtctg cgctgacatc 600
228 agagtcaaca gctggtaagg atttgcctct gtccctgctca ttattgtatt ggaccctctg 660
229 ctcatgttac tctcctatgc acttatacctg aagagtgtct tgaacacagc cacttggact 720
230 gaacgactcc gggctctcaa caactgtctg tcccacatgc tggctgttct ggttctctat 780
231 gtccctatgg ttggtgtgtc tatgactcac cgctttgcca agcatgcctc tccactggctc 840
232 catgtttctca tggccaatat ctacctgcta gcacctcctg tgatgaacct catcatttac 900
233 agtgtaaaga caaagcagat ccgtcaagga attactcgcc tcctcttgca gagaaagggtg 960
234 cactga

```

236 &lt;210&gt; SEQ ID NO: 9

237 &lt;211&gt; LENGTH: 981

238 &lt;212&gt; TYPE: DNA

239 &lt;213&gt; ORGANISM: Mus musculus

241 &lt;220&gt; FEATURE:

242 &lt;223&gt; OTHER INFORMATION: MOR31-1

244 &lt;400&gt; SEQUENCE: 9

```

245 atgaagggtgg cctcttcctt tcacaatgac accaatccac aggatgtgtg gtatgttctg 60
246 attggaattc caggactaga agatctacac tcctggatag ccattcccat ctgttctatg 120
247 tacatcgtgg ctgtcatagg caatgtcctc ctaatcttcc tgatagtgaac tgaacgcagt 180
248 ctgcatgagc ccattgtatt ttttctctcc atgctggcat tagcagacct cctgctctcc 240
249 acagctacag cccccaagat gctggctatc ttctggtttc attccagggg tatatccttt 300
250 ggtagtgtgtg tgtcccaaatt gttcttcata catttcattc ttgtggcaga gtctgctatt 360
251 cttctggcca tggcatttga ccgctatgtg gccatctgtt acccactgag atacaccacc 420
252 atccttactt cctcagtcatt tggcaagatt ggcacagcag ctgtggtcag aagctttctc 480
253 atctgttttc cattcatctt cctggatatc cgacttctgt attgtgggaa acacataatt 540
254 ccccttcatc actgtgagca catgggcatt gccagattgg catgcgacaa tatcactgtc 600
255 aacatcatat atgggctgac aatggccctc ctgtctactg ggctagatat actactcatc 660
256 attatttctt acaccatgat tcttcgcaat gtttttcaaa tcccttcctg ggctgccaga 720
257 tacaaggccc tcaacacatg tggctccac atctgtgtta ttcttttatt ctacactcct 780
258 gcattctttt cattttttgc ccacgcctt ggaggcaaaa ccgttcctcg ccacatccac 840
259 atcctagtgg ccaacctcta cgtgggtggg cccccaatgc ttaaccctat catctatggg 900
260 gtgaagacca agcagatcca agatcgagt gttttcctt tctcctcagt gagtacatgt 960
261 caacatgaca gcagatgtta a

```

263 &lt;210&gt; SEQ ID NO: 10

264 &lt;211&gt; LENGTH: 948

265 &lt;212&gt; TYPE: DNA

266 &lt;213&gt; ORGANISM: Mus musculus

268 &lt;220&gt; FEATURE:

269 &lt;223&gt; OTHER INFORMATION: MOR31-2

271 &lt;400&gt; SEQUENCE: 10

```

272 atgcttgga ctaacttcac tatcatccat ccaactgtgt tcactcctgct tgggaatccca 60
273 gggctggagc agtaccacac ctggctttct attccttttt gtcttatgta cattgctgca 120
274 gtcttgggga acggagccct catccttggt gtccctgagt aacgcaccct ccattgagccc 180
275 atgtatgtct tctgtcccat gctggctggc actgatattc tcctgtcaac caccactgtg 240
276 cctaagacct tggctatctt ttggttccat gctggggaga tcccttttga tgccctgcatt 300
277 gctcagatgt ttttcatcca cgttgctttt gtggctgagt cgggaatcct tctggccatg 360
278 gcatttgacc gatatgtggc tatttgtact cctctgagat actcagccgt cttaaacacct 420
279 atggcaattg gaaaaatgac cctggccatc tggggacgga gcattgggac aattttccct 480

```

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/774,355A

DATE: 10/29/2004  
TIME: 17:01:15

Input Set : D:\10774355 sequence listing.txt  
Output Set: N:\CRF4\10292004\J774355A.raw

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:795; N Pos. 265,266,267,268,269,270,271,272,273,274,275,276,277,278  
Seq#:795; N Pos. 279,280,281,282,283,284  
Seq#:817; N Pos. 186,187,188,189,190,191,192,193,194,195,196,197,198,199  
Seq#:817; N Pos. 200,201,202,203,204,205,206,207,208,209,210,211,212,213  
Seq#:817; N Pos. 214,215,216,217,218,219,220,221,222,223,224,225,226,227  
Seq#:817; N Pos. 228,229,230,231,232,233,234,235,236,237,238,239,240,241  
Seq#:817; N Pos. 242,243,244,245,246,247,248,249,250,251,252,253,254,255  
Seq#:817; N Pos. 256,257,258,259,260,261,262,263,264,265,266,267,268,269  
Seq#:817; N Pos. 270,271,272,273,274,275,276,277,278,279,280,281,282,283  
Seq#:817; N Pos. 284,285,286,287,288,289,290,291,292,293,294,295,296,297  
Seq#:817; N Pos. 298,299,300,301,302,303,304,305,306,307,308,309,310,311  
Seq#:817; N Pos. 312,313,314,315,316,317,318,319,320,321,322,323,324,325  
Seq#:817; N Pos. 326,327,328,329,330,331,332,333,334,335,336,337,338,339  
Seq#:817; N Pos. 340,341,342,343,344,345,346,347,348,349,350,351,352,353  
Seq#:817; N Pos. 354,355,356,357  
Seq#:818; N Pos. 308,309,310,311,312,313,314,315,316,317,318,319,320,321  
Seq#:818; N Pos. 322,323,324,325,326,327  
Seq#:848; N Pos. 613,614,615,616,617,618,619,620,621,622,623,624,625,626  
Seq#:848; N Pos. 627,628,629,630,631,632,633,634,635,636,637,638,639,640  
Seq#:848; N Pos. 641,642,643,644,645,646,647,648,649,650,651,652,653,654  
Seq#:848; N Pos. 655,656,657,658,659,660,661,662,663,664,665,666,667,668  
Seq#:848; N Pos. 669,670,671,672,673,674,675,676,677,678,679,680,681,682  
Seq#:848; N Pos. 683,684,685,686,687,688,689,690,691,692,693,694,695,696  
Seq#:848; N Pos. 697,698,699,700,701,702,703,704,705,706,707  
Seq#:852; N Pos. 213,214,215,216,217,218,219,220,221,222,223,224,225,226  
Seq#:852; N Pos. 227,228,229,230,231,232,233,234,235,236,237,238,239,240  
Seq#:852; N Pos. 241,242,243,244,245,246,247,248,249,250,251,252,253,254  
Seq#:852; N Pos. 255,256,257,258,259,260,261,262,263,264,265,266,267,268  
Seq#:852; N Pos. 269,270,271,272,273,274,275,276,277,278,279,280,281,282  
Seq#:852; N Pos. 283,284,285,286,287,288,289,290,291,292,293,294,295,296  
Seq#:852; N Pos. 297,298,299,300,301,302,303,304,305,306,307,308,309,310  
Seq#:852; N Pos. 311,312,313,314,315,316,317,318,319,320,321,322,323,324  
Seq#:852; N Pos. 325,326,327,328,329,330,331,332,333,334,335,336,337,338  
Seq#:852; N Pos. 339,340,341,342,343,344,345,346,347,348,349,350  
Seq#:856; N Pos. 558,559,560,561,562,563,564,565,566,567,568,569,570,571  
Seq#:856; N Pos. 572,573,574,575,576,577  
Seq#:858; N Pos. 691,692,693,694,695,696,697,698,699,700,701,702,703,704  
Seq#:858; N Pos. 705,706,707,708,709,710,711,712,713,714,715,716,717,718  
Seq#:858; N Pos. 719,720,721,722,723,724,725,726,727,728,729,730,731,732  
Seq#:858; N Pos. 733,734,735,736,737,738,739,740,741,742,743,744,745,746  
Seq#:858; N Pos. 747,748,749,750,751,752,753,754,755,756,757,758,759,760  
Seq#:858; N Pos. 761,762,763,764,765,766,767,768,769,770,771,772,773,774  
Seq#:858; N Pos. 775,776,777,778,779,780,781,782,783,784,785,786,787,788  
Seq#:858; N Pos. 789,790,791,792,793,794,795,796,797,798,799,800,801,802

**RAW SEQUENCE LISTING ERROR SUMMARY**  
PATENT APPLICATION: US/10/774,355A

DATE: 10/29/2004  
TIME: 17:01:15

Input Set : D:\10774355 sequence listing.txt  
Output Set: N:\CRF4\10292004\J774355A.raw

Seq#:858; N Pos. 803,804,805,806,807,808,809,810,811,812,813,814,815,816  
Seq#:858; N Pos. 817,818,819,820,821,822,823,824,825,826,827,828,829,830  
Seq#:858; N Pos. 831,832  
Seq#:859; N Pos. 597,598,599,600,601,602,603,604,605,606,607,608,609,610  
Seq#:859; N Pos. 611,612,613,614,615,616,617,618,619,620,621,622,623,624  
Seq#:859; N Pos. 625,626,627,628,629,630,631,632,633,634,635,636,637,638  
Seq#:859; N Pos. 639,640,641,642,643,644,645,646,647,648,649,650,651,652



## VERIFICATION SUMMARY

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:15

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

L:20787 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:795 after pos.:240  
L:21344 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:817 after pos.:180  
M:341 Repeated in SeqNo=817  
L:21377 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:818 after pos.:300  
L:22118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:848 after pos.:600  
M:341 Repeated in SeqNo=848  
L:22209 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:852 after pos.:180  
M:341 Repeated in SeqNo=852  
L:22310 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:856 after pos.:540  
L:22366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:858 after pos.:660  
M:341 Repeated in SeqNo=858  
L:22397 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:859 after pos.:540  
M:341 Repeated in SeqNo=859  
L:22429 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:860 after pos.:600  
L:22455 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:861 after pos.:240  
M:341 Repeated in SeqNo=861  
L:22487 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:862 after pos.:300  
M:341 Repeated in SeqNo=862  
L:22540 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:864 after pos.:420  
M:341 Repeated in SeqNo=864  
L:22611 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:867 after pos.:240  
M:341 Repeated in SeqNo=867  
L:22850 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:877 after pos.:300  
M:341 Repeated in SeqNo=877  
L:22913 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:879 after pos.:480  
M:341 Repeated in SeqNo=879  
L:22939 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:880 after pos.:300  
M:341 Repeated in SeqNo=880  
L:23100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:886 after pos.:480  
M:341 Repeated in SeqNo=886  
L:23202 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:890 after pos.:360  
M:341 Repeated in SeqNo=890  
L:23398 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:897 after pos.:660  
M:341 Repeated in SeqNo=897  
L:23428 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:898 after pos.:600  
L:23481 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:900 after pos.:420  
L:23619 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:905 after pos.:420  
M:341 Repeated in SeqNo=905  
L:23676 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:907 after pos.:480  
M:341 Repeated in SeqNo=907  
L:23721 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:909 after pos.:240  
L:23760 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:910 after pos.:720  
M:341 Repeated in SeqNo=910  
L:23821 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:913 after pos.:360  
L:24121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:925 after pos.:420  
L:24199 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:928 after pos.:240  
M:341 Repeated in SeqNo=928  
L:24415 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:937 after pos.:0

**VERIFICATION SUMMARY**

DATE: 10/29/2004

PATENT APPLICATION: US/10/774,355A

TIME: 17:01:15

Input Set : D:\10774355 sequence listing.txt

Output Set: N:\CRF4\10292004\J774355A.raw

M:341 Repeated in SeqNo=937

L:24451 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:938 after pos.:240  
L:30319 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:30320 M:281 W: Numeric Fields not Ordered, <222> Sort in ascending order!  
L:74235 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2152  
L:74332 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2154  
L:75173 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2173  
L:75284 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2175  
L:75622 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2182  
L:76310 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2196  
L:78060 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2235  
L:78286 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ ID#:2239  
L:81691 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2321  
L:88310 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2477